

WHAT IS CLAIMED IS:

1. A method for fabricating a semiconductor device,
which comprises the steps of:

- 5 forming a gate line on a semiconductor substrate;
 forming junction regions in the semiconductor
substrate at both sides of the gate line;
 forming and selectively removing an interlayer
insulating film on the resulting substrate to form contact
10 holes exposing the junction regions;
 forming plugs in the contact holes; and
 implanting impurity ions into the plugs; and
 annealing the junction regions.

- 15 2. The method of Claim 1, wherein the step of
annealing the junction regions is conducted by a rapid
thermal annealing (RTA) process.

3. The method of Claim 1, wherein the step of
20 implanting the impurity ions into the plugs is performed
after the step of annealing the junction regions.

4. The method of Claim 3, which additionally comprises
the step of performing a furnace annealing process after the

step of implanting the impurity ions.

5. The method of Claim 4, wherein the furnace annealing process is performed at a temperature of 600-900 °C.

5

6. The method of Claim 1 or 3, wherein the step of implanting the impurity ions into the plugs is carried out using phosphorus (P) or arsenic (As) source gas at an ion implantation energy of 10-40 KeV and a dose of $1.0E15$ - $1.0E16$.

10

7. The method of Claim 1 or 3, wherein the step of annealing the junction regions is carried out at a temperature of 850-1,100 °C, a ramp-up rate of 10-200 °C/s and a ramp-down rate of 10-200 °C/s for 10-60 sec under a gas atmosphere of N_2 , O_2 , N_2/O_2 mixture, Ar, NH_3 or N_2O .

15

8. The method of Claim 1, which additionally comprises the step of forming an oxide film or a nitride film on the plugs.

20

9. The method of Claim 1 or 8, which additionally comprises the step of performing an etchback process or a CMP process on the plugs.

10. The method of Claim 8, wherein the step of implanting the impurity ions into the plugs is carried out using phosphorus (P) or arsenic (As) source gas at an ion implantation energy of 10-80 KeV and a dose of $1.0E15$ - $1.0E16$.

5

10